

ON TROPICOS: names, types, syn. & disty.

THREE NEW SPECIES OF ZANTHOXYLUM (RUTACEAE) FROM DARIEN PROVINCE, PANAMA

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#0005452

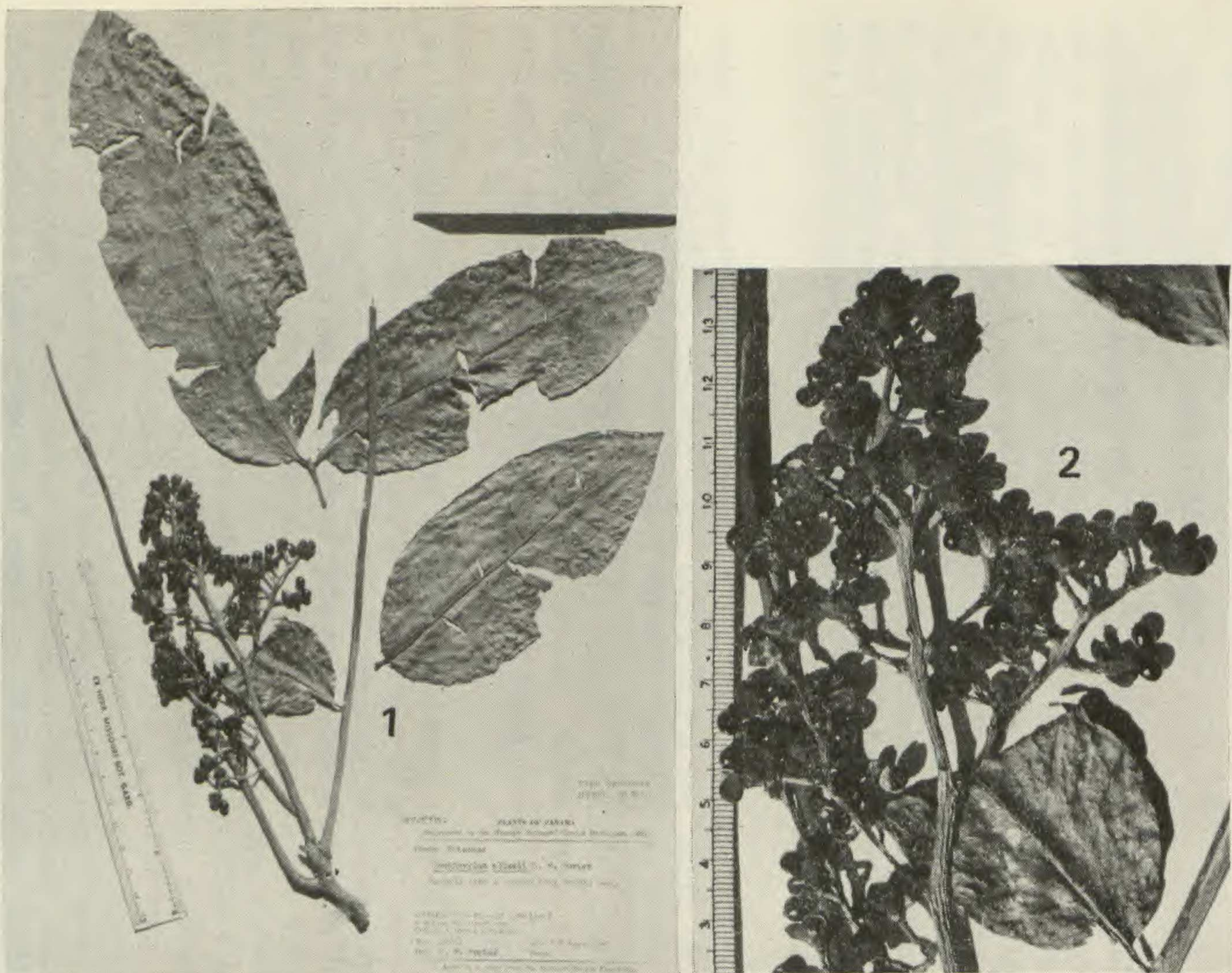
LIKE MANY WIDESPREAD, species-rich, tropical woody genera, *Zanthoxylum* suffers from a lack of adequate collections in the herbarium. A few species are represented by numerous specimens, but for the vast majority there are few, one, or more often than that none. It is impossible to gain an adequate grasp of such a genus without examining a large suite of specimens from throughout its range; it is also impossible to have any understanding of specific relationships without doing so. Knowledge of *Zanthoxylum* is such that the relationships of the species described below from eastern Panama are obscure. Unfortunately, each is known only from the type collection.

Zanthoxylum eliasii D. M. Porter, sp. nov. *Zanthoxylum kellermanii* affinis, sed inflorescentiae ramis puberulis et folliculis maturis 3 vel raro 1 vel 4 differt. FIGURES 1 and 2.

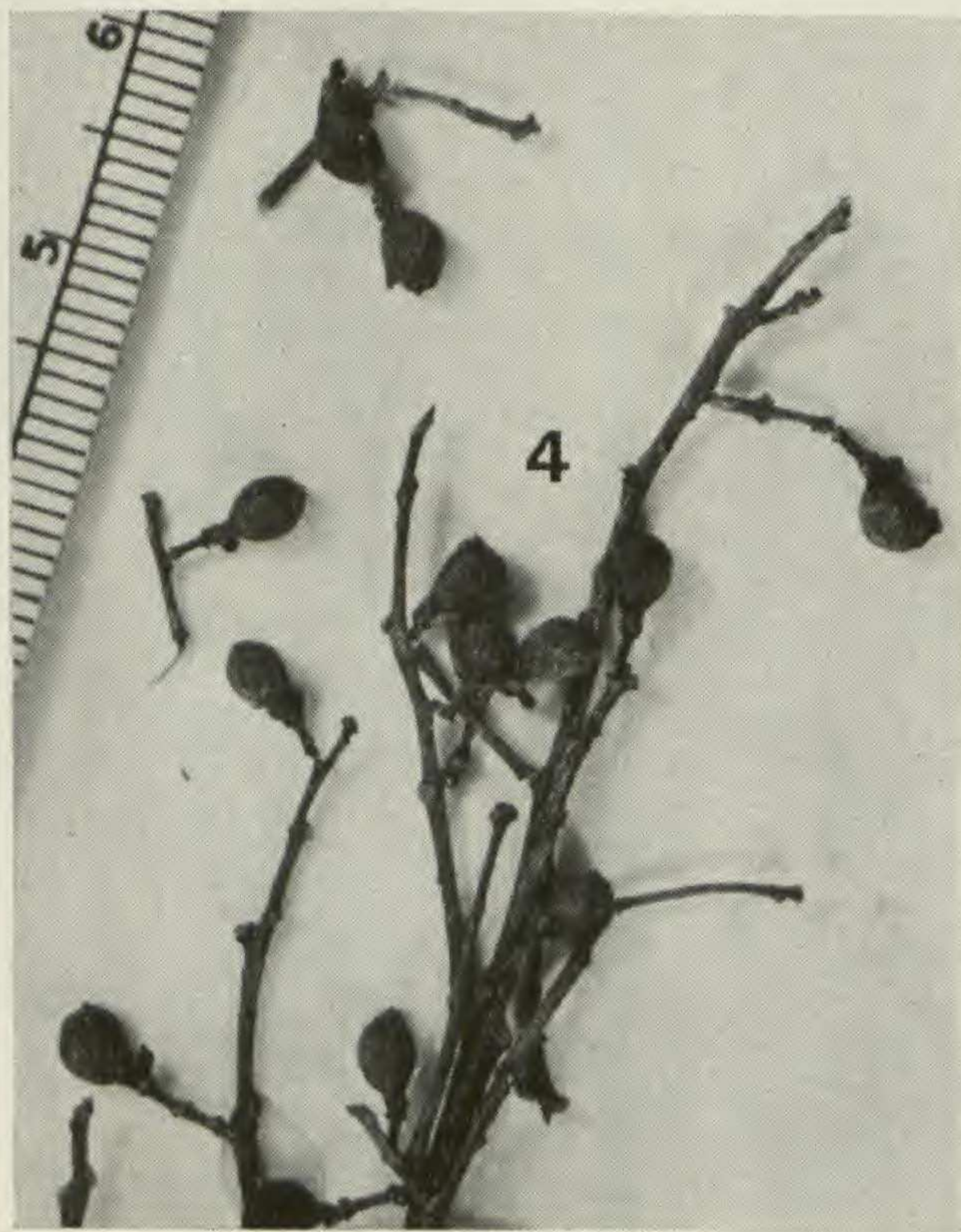
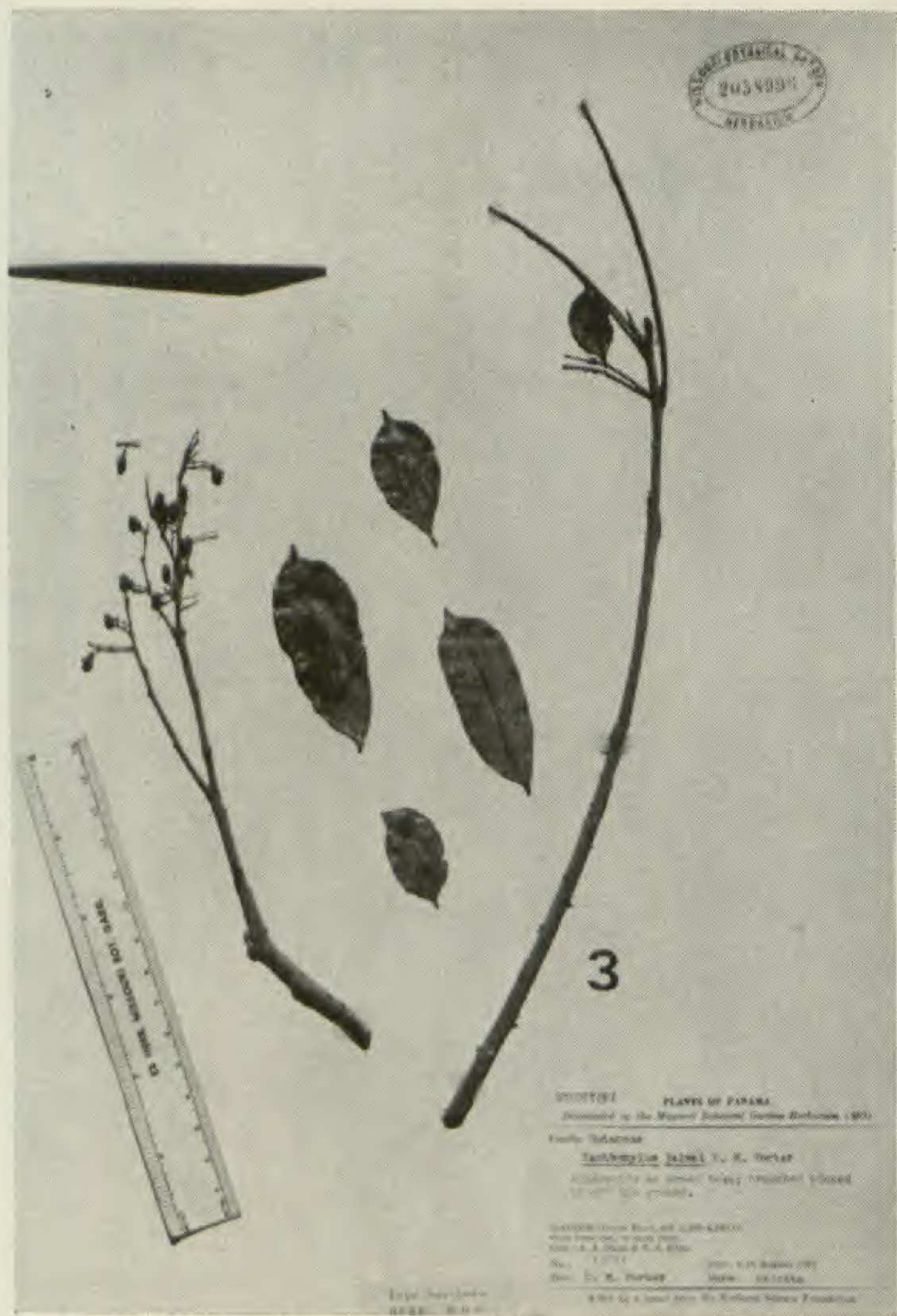
✓TYPE. ✓Darién: "Cerro Pirre, alt. 2,500–4,500 ft. Cloud forest and/or mossy forest. Spindly tree 4 inches DBH; fruits red." 9–10 August 1967, J. A. Duke & T. S. Elias 13851 (MO, holotype; F, GH, isotypes).

Spindly tree; branchlets glabrous. Leaves alternate, odd-pinnate; petiole and the rachis together 15–32 cm. long, canaliculate above, minutely puberulent to glabrate; leaflets 7, opposite or subopposite, ovate to oval, abruptly acuminate apically, inequilateral and more or less rounded basally, the margins entire, subcoriaceous, pellucid-punctate throughout, minutely and sparingly puberulent on the veins below, 10–22 cm. long and 5.5–8.5 cm. wide, the petiolules canaliculate above, to 1 cm. long. Carpellate inflorescences stout, axillary, minutely puberulent, 7.5–16.5 cm. long and to 10 cm. wide in fruit. Carpellate flowers with the pedicels stout, minutely puberulent, 4–7 mm. long in fruit; sepals 5, triangular, less than 1 mm. long; carpels 3(–4), connate. Follicles (1–)3(–4), subglobose, sessile, more or less beaked, connate basally, punctate-glandular, glabrous, red at maturity, ca. 5 mm. in diameter; seeds subglobose, black, shiny, ca. 5 mm. in diameter.

This species is named for Dr. Thomas S. Elias, an avid student of the Rutaceae. *Zanthoxylum eliasii* appears to be related to *Z. kellermanii* P. Wilson of British Honduras, Guatemala, Honduras, and El Salvador. In Wilson's key to the genus in North America (N. Am. Fl. 25: 178–180.



FIGURES 1 AND 2, *Zanthoxylum eliasii* D. M. Porter. 1, photo. of holotype specimen; 2, close-up of follicles.



FIGURES 3 AND 4, *Zanthoxylum jamei* D. M. Porter. 3, photo. of holotype specimen; 4, close-up of follicles.

1911), which includes Panama, *Z. eliasii* would be determined as *Z. kellermanii*. However, the latter differs in having even-pinnate leaves, appressed-pubescent branches of the inflorescence, and 2 or 3 mature follicles.

✓*Zanthoxylum jaimeii* D. M. Porter, sp. nov. *Zanthoxylo arborescenti* aemulans, differt foliolis ca. 9–11 et ramulis, rhachidibus, et inflorescentiae ramis puberulis. FIGURES 3 and 4.

✓TYPE. ✓Darién: "Cerro Pirre, alt. 2,500–4,500 ft. Cloud forest and/or mossy forest. Apparently an armed tree; branch picked up off the ground." 9–10 August 1967, J. A. Duke & T. S. Elias 13793 (MO, holotype).

Tree; branchlets armed with small brownish prickles, minutely puberulent. Leaves apparently odd-pinnate; petiole and the rachis together 3–10 cm. long, minutely puberulent, especially toward the base; leaflets ca. 9–11, opposite (?), elliptic to obovate, abruptly acuminate apically, inequilateral and cuneate basally, the margins crenulate, coriaceous, pellucid-punctate throughout, minutely puberulent, especially along the impressed midrib above and on the blade beneath, 25–65 mm. long and 13–27 mm. wide, the petiolules ca. 1 mm. long. Carpellate inflorescence minutely puberulent, the main branch armed with small brownish prickles, 15 cm. long in fruit. Carpellate flowers with the pedicels minutely puberulent, 1–2 mm. long in fruit; sepals 5, triangular, apiculate, minutely puberulent, less than 1 mm. long; carpels 3, free. Follicles 1, subglobose, beaked, shortly stipitate, punctate-glandular, glabrous, 3–4 mm. in diameter.

This species is named for Dr. James A. Duke, prodigious collector of Panamanian plants. The epithet *dukei* is not used because of the prior publication of *Fagara duckei* de Albuquerque (Publ. Inst. Nac. Pesq. Amazonia Bot. 27: 6. 1968) from the ✓Brazilian State of ✓Pará. I agree with Brizicky (Jour. Arnold Arb. 43: 80–83. 1962) and Hartley (op. cit. 47: 171, 172. 1966) that *Fagara* L. and *Zanthoxylum* L. are congeneric. Thus the Brazilian species should be regarded as *Zanthoxylum duckei* (de Albuquerque) D. M. Porter, comb. nov.

In Wilson's key to *Zanthoxylum* (N. Am. Fl. 25: 178–180. 1911), *Z. jaimeii* would be determined as *Z. arborescens* Rose, from the Mexican states of ✓Baja California, ✓Sinaloa, and ✓Jalisco. The latter has 3 to 7 leaflets, and the twigs, leaf rachises, and branches of the inflorescences are densely hispidulous.

✓*Zanthoxylum pucro* D. M. Porter, sp. nov. *Zanthoxylo bijugo* aemulans, differt ramulis et foliis glabris et inflorescentiis scabridiusculis. FIGURE 5.

✓TYPE. ✓Darién: "Forest 1–4 mis. n. of Pucro. Armed tree 5" DBH;

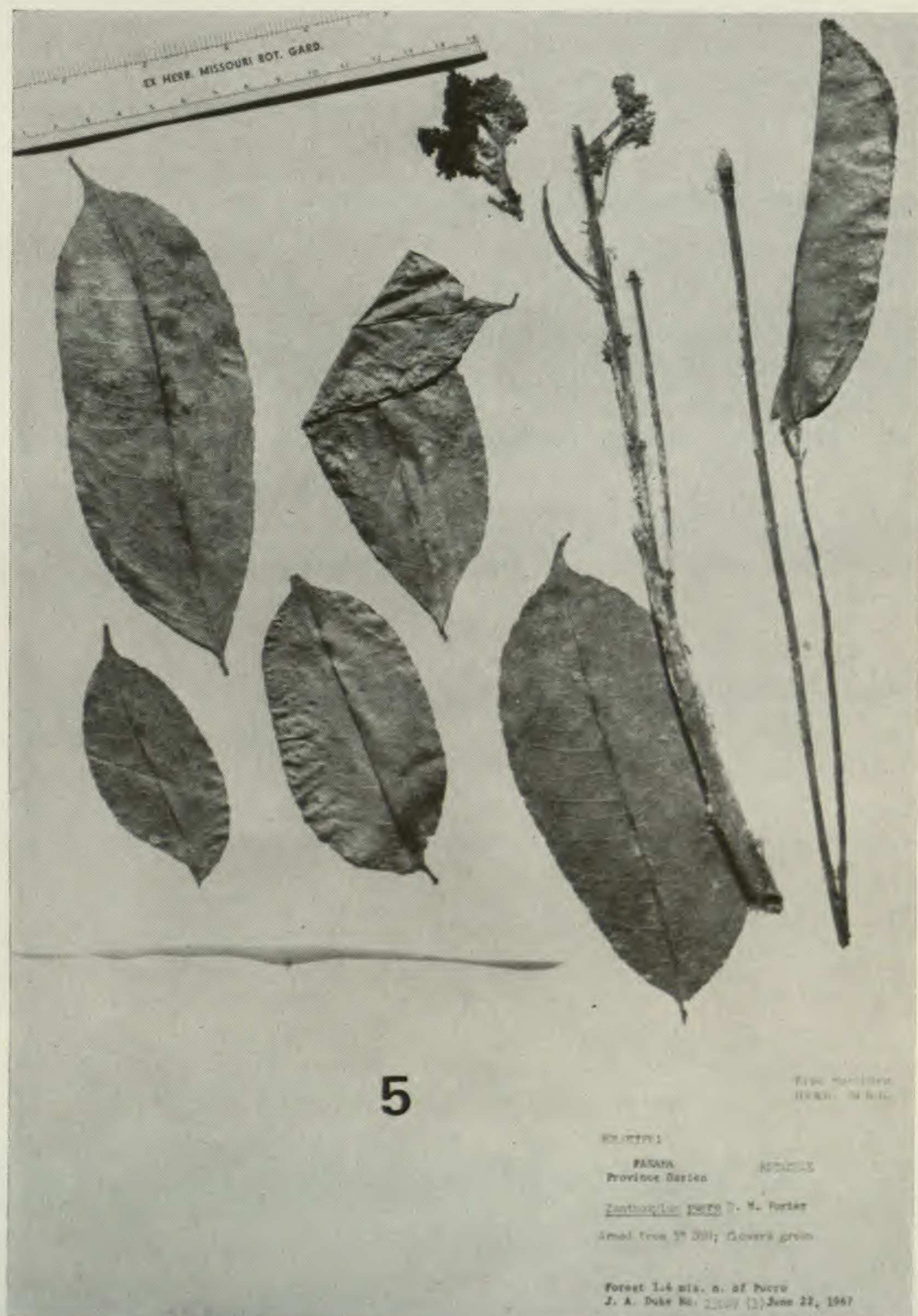


FIGURE 5, *Zanthoxylum pucro* D. M. Porter, photo. of holotype specimen.

flowers green." 22 June 1967, *J. A. Duke 13029* (mo, holotype; GH, isotype).

Tree, armed with prickles; branchlets glabrous. Leaves apparently odd-pinnate; petiole and the rachis together 44–53.5 cm. long, glabrous, more or less canaliculate above; leaflets apparently alternate, oblong, inequilateral, abruptly acuminate apically, oblique basally, the margins crenate, membranaceous, pellucid-punctate only at the bases of the crenations, glabrous, 6.5–17.5 cm. long and 3–6 cm. wide, the petiolules to 5 mm. long, winged. Staminate inflorescences congested, paniculate, terminal (?), scabridulous. Staminate flowers green in bud, the pedicels to 1 mm. long, scabridulous; sepals 5, broadly triangular, glandular-punctate, the margins hyaline, ciliate, imbricate, the 3 outermost larger, ca. 1 mm. long; petals 5, obovate, glandular-punctate, yellow (?), imbricate; stamens 5, the anthers sagittate; the filaments inserted on the disc; ovary ovoid, sharply 5-lobed and each lobe bilobed, glandular-punctate, glabrous, less than 1 mm. in diameter, star-shaped in cross-section, the styles 3, free. Follicles unknown.

Unfortunately, the type specimen was collected under circumstances of high temperature and high humidity, conditions not conducive to good preservation of plant materials. It is overgrown with fungi, and all the leaflets have fallen from the rachises. However, the material is sufficiently well preserved to show that it is unlike any other member of the genus yet described.

In Wilson's key to the genus in North America (N. Am. Fl. 25: 178–180. 1911), *Zanthoxylum pucro* would be determined as *Z. bijugum* (Engler) P. Wilson, from Oaxaca, Mexico. However, the latter differs most obviously in having the twigs, foliage, and inflorescences densely pilose.

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